(168)

The Russians' New Sleep Machine

...et scientists have come up with a ...ce that claims will crowd a full night's ...p into two hours and help treat ...tional disturbances too. Here is an ...erican doctor's report from Moscow

By Dr. CYRIL SOLOMON

(This Week's Medical Consultant)

MOSCOW

...TISTS IN THE SOVIET UNION are rapidly ...ing a machine which may have a pro... effect on what we call a good night's ...leep. The Russians test this device, ...he electrosone, which they claim packs ...ours of deep, restful sleep into two hours or less. ...physicians say the electrosone will have an even more ...nt role as a dramatic new weapon in medicine's fight to ... disease.

...electrosone I observed looks like a ham radio opera... ...eiving set, complete with dials and gauges. But in ...the earphones there is a mask like leather and cloth ...s. The machine itself is 20 inches long, 12 inches high ...inches deep. It is portable and weighs just 26 pounds. ...e same as an office typewriter.

...s how the Soviet doctors explain the machine's ...by transmitting harmless electrical impulses through ...n, at quick and painless strings about complete ... of consciousness. The electrosone produces condi... ...actly duplicating deep, natural sleep: muscles relax, ...d respiration slow down, blood pressure drops and ...matic abdominal breathing ...

...WHAT IT'S LIKE: The Week's Medical Consultant is ... ...in a New York hospital. He reports: I heard ... ...buckling ... ...room stopped. Next thing I ... ...room animated, and actually I ... ...dropped from 160 ... ...

(168)

...to make two hours' sleep equal eight

...electrosome means. Editor Lasker tested [illegible] with...

...takes over from thoracic (lung) breathing.

If what they say is true, the implications for everyday living are obviously tremendous. We would all have several extra hours a day to use either for productive work or for leisure time activity. In a way, it would be like adding a couple of extra days to every week.

Physicians in the United States are now making initial tests with the electrosome. At a recent meeting of the American Congress of Physical Medicine and Rehabilitation, Dr. Bernard S. Post, Dr. Sigmund Forster and Dr. Joseph C. Benton, all of the State University of New York's Downstate Medical Center, New York City, confirmed many of the Russian findings. Using an apparatus patterned after the Russian electrosome, they found that "even two hours' current apparently delivers the effect of a full night's rest." They also confirm that their sleep machine relaxes spasticity, eases their muscles and can help some victims of cerebral palsy, cerebral palsy and paraplegia. Other researchers hope to use the electrosome to correct various psychiatric disorders.

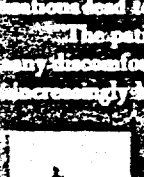
The sword of Damocles

I first heard of the electrosome from colleagues who studied in Moscow on a medical-exchange program. I decided I would look into the electrosome when I came here to attend the recent International Cancer Congress.

Sasha, my attractive Intourist guide, found it easy to arrange a visit with Dr. S. I. Lipsky and Dr. Henry Patton at the Institute of Therapy. I watched Dr. Patton demonstrate the apparatus on an assistant. He placed oval patches over each eye, and long thin straps behind her ears, giving a Halloween mask effect. Electrode pads of absorbent material were soaked in salt water to help conduct current.

The electrodes over the eyes are connected to the negative pole and the electrodes which are behind the ears are attached to the positive pole of the generator. Current running through the electrodes and into the patient is five to 15 milliamperes. (An ordinary household electric current is 1,250 milliamperes.)

The impulses are sent through the electrodes at approximately the same rate...



...brain waves register on an electro-encephalogram.

The principle behind the Russian sleep machine is simple. A weak, rhythmic electrical impulse is sent to the part of the brain which controls sleep and metabolism, dulling it you into a sleep, natural sleep. Soviet doctors say the electrosome puts a patient to sleep the same way a rocking cradle puts a baby to sleep. But, in this case, the sleep is so deep, and achieved so fast, that the patient awakes up fully refreshed and invigorated in fewer hours.

Dr. Alexandre N. Obrosow, a Russian sleeping expert and electrical sleep [illegible] he told me:

"The generator is easy to operate and may be connected to a simple electric outlet. If it should be turned on for a minute so the tubes develop an operating temperature. While the tubes are warming up, the patient is placed on a comfortable couch. The low-frequency current is turned on, sending electrical impulses to the base of the brain, the cerebellum and the medulla. The pulsations lead to an inhibitory process.

"The patient should not experience any discomfort. Gradually, he senses an increasingly heavy feeling of the eyelids and an alright feeling of [illegible]. Finally, the patient falls into a deep, restful sleep.

"It generally takes less than ten minutes for the patient to fall asleep once the treatment begins," Dr. Obrosow says.

"All his findings indicate electrosome sleep is superior to sleep induced by drugs or anaesthesia, and is more restful and reproduces no ill effects.

"Physicians using the electrosome say that their patients have pleasant dreams when they happen to remember them at all. And a two-hour treatment with the electrosome leaves the user fully refreshed and invigorated, just as he would be after a full night of natural sleep."

...blood pressure, schizophrenia, [illegible] and other psychiatric disorders. They also say the electrosome will cause the regress of many other dread diseases.

Dr. Obrosow continued: "Electro-sleep was first used for patients at the Institute of Psychiatry of the Department of Health of the Soviet Union and soon became popular. It brought good results in schizophrenia [illegible] many investigators believe result from overexhaustion of the nervous system.

"Sleep therapy affords the brain cells the best opportunity for complete restoration. Artificial sleep for 20 to 30 days can improve the condition of the patient to the point at which the patient may return to normal [illegible]

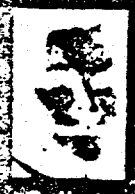
Sleep therapy

The late Ivan P. Pavlov, Russia's Nobel Prize-winning physiologist, first observed that it was possible to obtain sleep with a weak external stimulus that would be rhythmic, monotonous and of long duration. By prolonging current [illegible] such stimulus, Pavlov's work [illegible] the basis for the avoidance of sleep treatment in recent years in the Soviet Union. In 1935, the reported success of fully treating a case of catatonic schizophrenia with sleep-electrosome therapy. This stimulated more experimentation. The electrosome now being used all over Russia was invented in 1951 by the late Dr. V. A. Gilyarevski, first to [illegible]

Russian physicians reported [illegible]

Stubborn Ailments

trosone. He said patients must be in a relatively calm state and, when treating nervous disorders, organically healthy. Dr. Liventsev told me that after several electrosone treatments some patients often are able to fall into the same deep, restful sleep without the current being turned on.



This, Dr. Obrosow pointed out, proves Pavlov's conditioned-reflex theories. In the Soviet Union all nervous disorders are treated on the basis of Pavlov's work. In the United States, Sigmund Freud's work is usually basic.

Obrosow and Liventzev have had noteworthy success using the electrosone to treat hypertension — high blood pressure. In one clinic a third of the beds are devoted to treating hypertensives. One sleep machine can administer to four patients simultaneously. Six were used in all.

Hope for hypertensives

They recorded the results of electro-sleep on 300 hypertensives. With labile hypertensives, patients whose blood pressure varies from normal to high, the electrosone was an unbelievable 100 per cent effective. In stabile diastolic hypertensives, patients whose blood pressure remains consistently high (too much peripheral resistance of the blood vessels in the kidneys and extremities,) the machine was said to be 70 to 80 per cent effective. It did not work at all with organically ill hypertensives.

I discussed with Dr. Liventsev the electrosone's effect on one hypertensive, a 29-year-old male. The patient's blood pressure registered 170/110. Normal blood pressure for a man that age is about 135-110/90-70. After four months of electrosone treatment his reading improved to 140/86.

Electro-sleep treatment of hypertensives is given six days a week for 30 minutes. After two weeks, treatment is increased to 40 minutes. Many hypertensives are treated for several weeks in hospitals and later shifted to out-patient status. Then treatment is every third or fourth day.

World-wide electrosone use

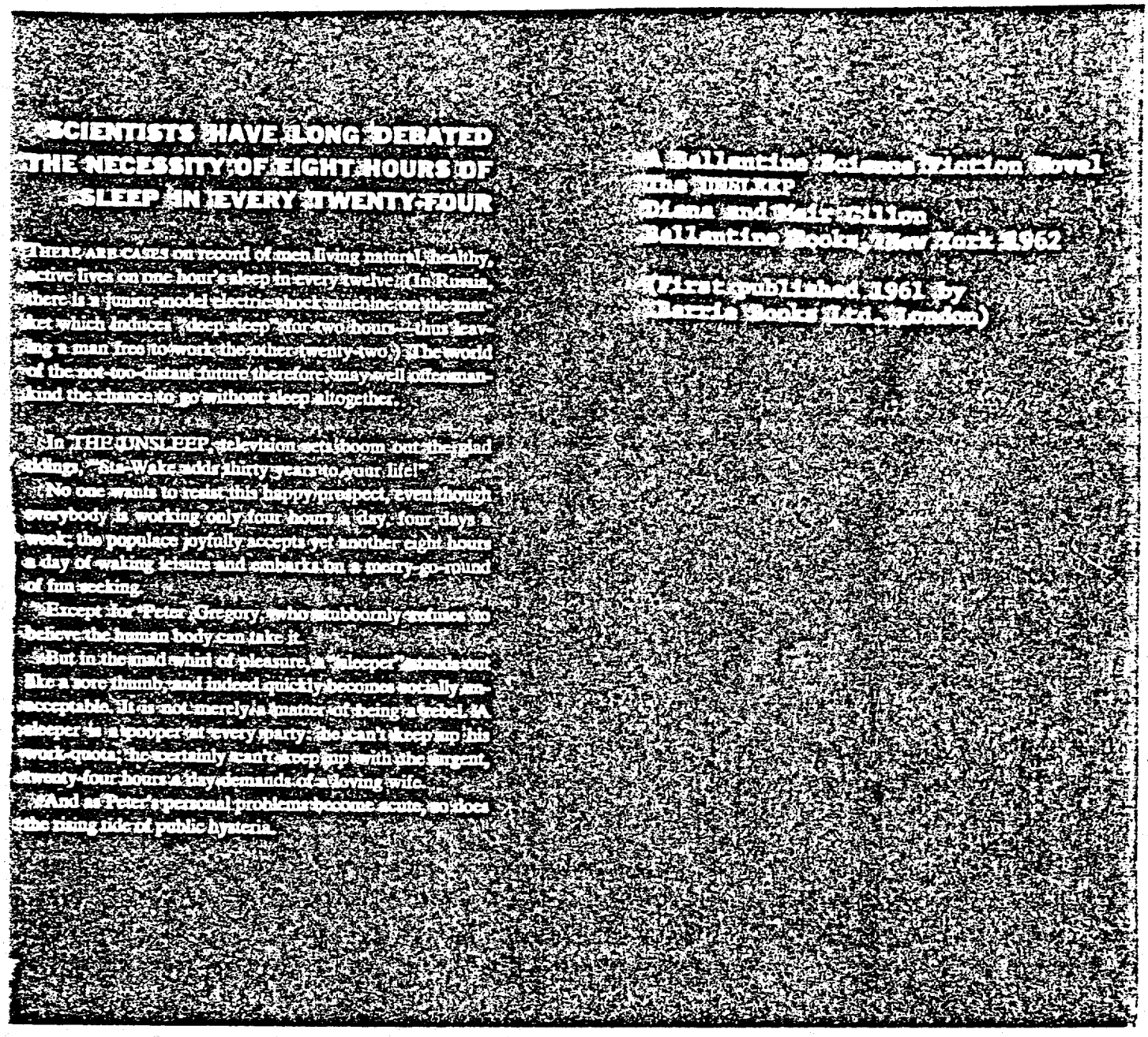
The Soviet doctors told me they are also experimenting with the electrosone to treat insomnia, hallucinations, ulcers, bronchial asthma and encephalitis. Russian medical journals show they also are trying to treat pancreatitis, rheumatism, eczema, neurosis, tuberculosis and toxemia of pregnancy.

Personally, I think the Soviets are overenthusiastic. But some of the electrosone experiments Japanese manufacturers have a transistorized model, which, claim the Russians, "can't very good." Physicians in France, Italy, Czechoslovakia and Germany are experimenting with the electrosone.

As we learn more about how the machine affects the mind and the body we may expect to find further applications for it. [illegible] many in the U.S. and [illegible]

So soft you forget them so safe that you can...

Fems



SCIENTISTS HAVE LONG DEBATED THE NECESSITY OF EIGHT HOURS OF SLEEP IN EVERY TWENTY-FOUR

THERE ARE CASES on record of men living natural, healthy, active lives on one hour's sleep in every twelve. In Russia, there is a 'junior-model' electric shock machine on the market which induces 'deep sleep' for two hours — thus leaving a man free to work the other twenty-two.) The world of the not-too-distant future therefore may well offer mankind the chance to go without sleep altogether.

In THE UNSLEEP, television sets boom out the glad tidings, "Six Wake adds thirty years to your life!"

No one wants to resist this happy prospect, even though everybody is working only four hours a day, four days a week; the populace joyfully accepts yet another eight hours a day of waking leisure and embarks on a merry-go-round of fun-seeking.

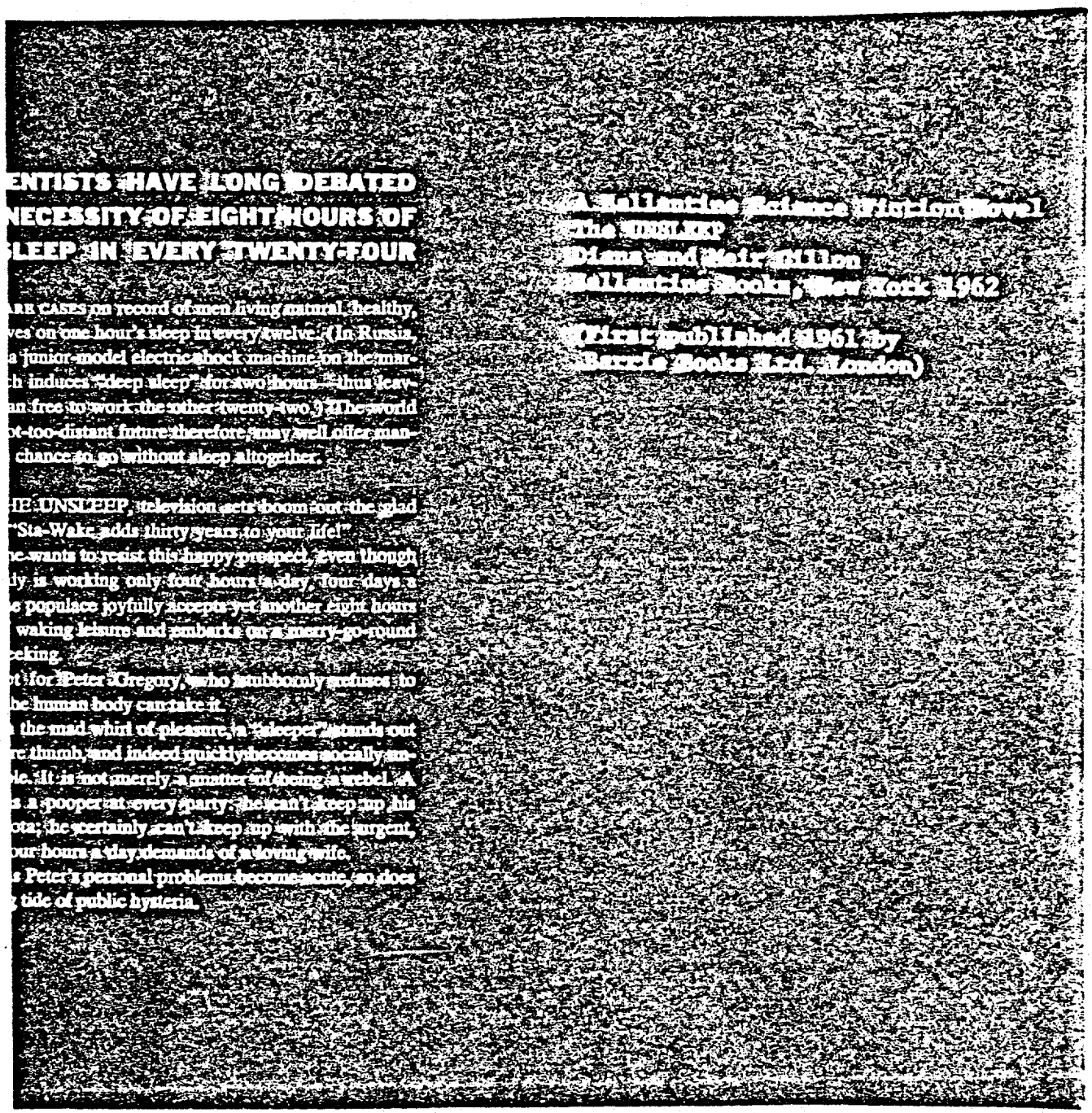
Except for Peter Gregory, who stubbornly continues to believe the human body can take it.

But in the mad whirl of pleasure, a "sleeper" stands out like a sore thumb, and indeed quickly becomes socially unacceptable. It is not merely a matter of being a rebel. A sleeper is a spoiler at every party. He can't keep up his work quota; he certainly can't keep up with the urgent, twenty-four hours a day demands of a loving wife.

And as Peter's personal problems become acute, so does the rising tide of public hysteria.

[illegible] (Science fiction novel)
[illegible] UNSLEEP
[illegible] and Well — 25 Million
[illegible] Books — New York — 1962

(First published 1961 by
[illegible] Books Ltd., London)



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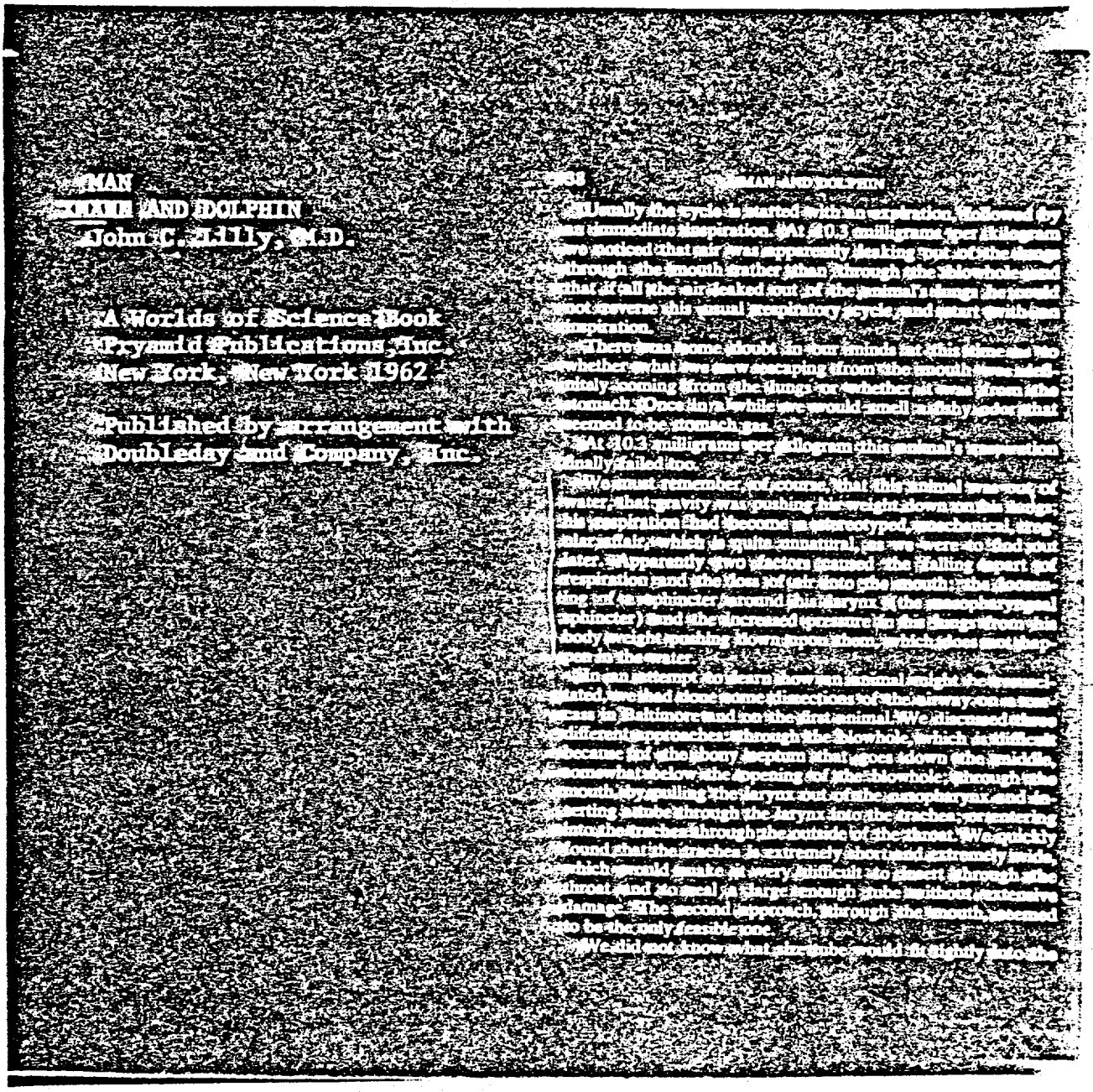
A Hall-Limelight Reference Book (originally)
The UNSLEEP
Drama and Motivation
Hall-Limelight Books, New York 1962

(Originally published 1961 by
Barcelo Books Ltd., London)

MAN
AND DOLPHIN
John C. Lilly, M.D.

A Worlds of Science Book
Pyramid Publications, Inc.
New York, New York 1962

Published by arrangement with
Doubleday and Company, Inc.



the human these areas of the brain give rise to an intense sense of well-being without any particular instinctual direction, that is, the sense of well-being is not sexual, or connected with food, hunger, thirst, etc. In so far as we can determine, many of these systems are insatiable; they exert a powerful influence as long as the animal is awake, and repeating the stimulus again and again does not wear out the effect.

Using this "reward-stimulation" technique, we demonstrated quite satisfactorily that a dolphin can vocalize in two different ways. One, in his usual fashion, under water, and the other by emitting air through his blowhole so that he produces air-borne sounds that we can hear. By changing back and forth between responding to him under water or in air we could induce a particular animal to emit his sounds either under water or in air.

There are, of course, many obstacles to a mutual understanding between dolphins and men. Consider their activities compared with ours. They have no written records and make no artifacts. They lack hands like ours and are not building anything. They have no need of transportation, because it is built in. They can swim at twenty knots and in a few days cover thousands of sea miles in a search for food or more desirable water temperatures. They have no need to store food, because it abounds in the sea for the taking. They have no need for clothing or shelter. They have no need for gravity-resisting forces of the magnitude that we do. Their gravity resistance is distributed over the whole integument, rather than on the bottom of the feet or on the buttocks as in our case.

Because they do not constantly have to resist gravity as we do, they do not need to sleep as we do. As we discovered, they cannot afford sleep unconsciousness at all from any cause—anesthesia, epileptic convulsions, or a blow on the head hard enough to produce unconsciousness will kill them.

They do not seem to have the kind of automatic respiratory system that allows us to breathe while we are unconscious. Being under water seems to inhibit the dolphin's respiration completely, and in order to breathe and release the

A FALL OF MOONDUST
Arthur C. Clarke
Dell Publishing Co., Inc. 1963
New York, New York

Reprinted by arrangement with
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New York

If there were any other possibilities he had overlooked, this was not the first occasion he had been forced to put his trust against this strange and beautiful world, so breath-taking in her moments of magic—so deadly in her times of peril. She would never be wholly tamed, as Earth had been, and perhaps that was just as well. For it was the lure of the wild, touched wilderness and the faint but ever-present hint of danger that now brought the tourists, as well as the explorers, across the gulfs of space. He would prefer to do without the tourists—but they helped to pay his salary.

And now she had better start packing. This whole scene might evaporate, and *Selene* might turn up again quite unaware of the panic she had caused. But she did not think that would happen, and his fear deepened to certainty as the minutes passed. He would give her another hour—then she would take the suborbital shuttle to Port Roris and to the realm of his waiting enemy, the Sea of Thirst.

When the Priority Red signal reached Lagrange, Thomas Lawson, Ph.D., was fast asleep. He resented the interruption, although one needed only two hours' sleep in twenty-four when living under zero gravity, it seemed a little unfair to lose even that. Then he grasped the meaning of the message, and was fully awake. At last it looked as if he would be doing something useful here.

Tom Lawson had never been very happy about this assignment: he had wanted to do scientific research, and the atmosphere aboard Lagrange II was much too distracting. Balanced here between Earth and Moon, and cosmic flight-ropes set made possible by one of the obscurer consequences of the law of gravitation, the satellite was an astronautical maid-of-all-work. Ships passing in both directions took their fixes from it, and used it as a message center—though there was no truth in the rumor that they stopped to pick up mail. Lagrange was also the relay station for almost all lunar radio traffic, because the whole earthward-facing side of the Moon lay spread beneath it.

The hundred-centimeter telescope had been designed to look at objects billions of times farther away than the Moon, but it was admirably suited for this job. From so

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